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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,095	03/02/2007	Zhenfu Zhao	007556.00001	5773

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WASHINGTON, DC 20005-4051

EXAMINER
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ANWARI, MACEEH

ART UNIT	PAPER NUMBER
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2444

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08/31/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/585,095	<b>Applicant(s)</b> ZHAO ET AL.	
	<b>Examiner</b> MACEEH ANWARI	<b>Art Unit</b> 2444	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. This action is in response to communications filed on 6/14/2010. **Claim(s) 1-2, 9-12** have been amended and **claims 14- 16** have been cancelled. No other claims have been amended, added, or canceled. Accordingly, **claim(s) 1- 13** are pending.

### *Response to Arguments*

2. Applicant's arguments with respect to **claims 1 -13** have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1- 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lim et al.** (hereinafter **Lim**, U.S. Patent No.: 5, 884, 024) in view of **Wong et al.** (hereinafter **Wong**, U.S. Patent No.: 6,073,178) and further in view of **Michael et al.** (hereinafter **Michael**, International Pub. No.: WO 98/26530).

5. Regarding **claims 1** discloses a method for controlling a DHCP relay in a broadband access device to implement the broadband access device for controlling and managing all interactions between a DHCP client and a DHCP server, comprising:

modifying, at the broadband access device, one or more protocol data fields in at least one DHCP message communication between a DHCP relay, the

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DHCP client and the DHCP server during an initiation phase of the DHCP interaction at an Application Layer of TCP/IP protocol, so that all DHCP messages communicated between the DHCP client and the DHCP server pass through the DHCP relay (**Fig. 1- 4 and Abstract & Col. 5 line 49- Col. 6 line 27; secure IP relay agent, DHCP broadcast messages are processed by DHCP relay before being forwarded to DHCP sever**),

wherein modifying the one or more protocol fields includes:

upon receiving a DHCP message for request sent from the DHCP client to the DHCP server, filling in at least one field associated with the DHCP relay in the DHCP message for request such that all the DHCP messages for response returned from the DHCP server to the DHCP client for responding to the DHCP message for request pass through the DHCP relay (**Fig. 1-2 and Col. 6 lines 1- 27; DHCP really process and DHCP broadcast messages are processed by DHCP relay before being forwarded to DHCP sever**).

However, **Lim** does not appear to explicitly disclose upon receiving a DHCP message for response sent from the DHCP server to the DHCP client, replacing at least one server parameter of a field associated with the DHCP server in the DHCP message for response with at least one relay parameter of the DHCP relay.

In the same field of endeavor, **Wong** discloses upon receiving a DHCP message for response sent from the DHCP server to the DHCP client, replacing at least one server parameter of a field associated with the DHCP server in the

DHCP message for response with at least one relay parameter of the DHCP relay (**Fig. 1 & 6-8 and Col. 6 line 7- Col. 7 line 65; IP address learning, trusted identifiers and relaying of messages between client and server through “relay agent”**).

Accordingly it would have been obvious to one of ordinary skill in the networking art to modify or incorporate **Wong’s** teachings of IP address learning with **Lim’s** secure DHCP server system to provide for a more secure messaging system (e.g., by incorporating trusted identifiers to transmitted messages).

Furthermore regarding **claim 1, Lim-Wong** discloses the invention as discussed above however they do not appear to disclose wherein all the DHCP messages communicated between the DHCP client and the DHCP server pass through the DHCP relay.

In the same field of endeavor **Michael** discloses wherein all the DHCP messages communicated between the DHCP client and the DHCP server pass through the DHCP relay (**Michael: At least p. 3 line 27- p. 4 line 3: Intelligently routing DHCP packets to only the network segment on which the initiating client is located**).

One of ordinary skill in the art at the time of the given invention would have been motivated to either modify and or combine the teachings of **Michael’s** intelligent routing of DHCP packets, with those of **Lim** and **Wong’s** to provide a more efficient use of network bandwidth (by not wasting processing resources on non-participating devices).

6. Regarding **claim 2, Lim-Wong-Michael** discloses wherein modifying the one or more protocol fields further includes:

extracting and storing at the DHCP relay, the at least one server parameter of the field associated with the DHCP server in an initial DHCP message for response prior to replacing the at least one server parameter with the at least one relay parameter of the DHCP relay **(Wong: Fig. 1 & 6-8 and Col. 6 line 7- Col. 7 line 65; IP address learning, trusted identifiers):**

sending the initial DHCP message for response to the DHCP client **(Wong: Fig. 6 [616]);**  
processing, at the DHCP relay, a subsequently received DHCP message for response returned from the DHCP server to the DHCP client **(Wong: Fig. 6 [618]; forwarded at router 106);**

determining whether the subsequent received DHCP message for response contains the field associated with the DHCP server,

in response to determining that the subsequently received DHCP message for response does not contain the field associated with the DHCP server, sending the subsequently received DHCP messages for response to the DHCP client directly **(Wong: Fig. 6 [618-620]; forwards message to recipient client),**

otherwise, replacing the at least one DHCP server parameter in the field associated with the DHCP server with the at least one DHCP relay parameter, and then sending the subsequently received DHCP message for response to the DHCP client so that a subsequent DHCP message for request sent from the

DHCP client to the DHCP server can pass through the DHCP relay (**Wong: Fig. 6 [618-620]; IP learning/indexing and forwards message to recipient client**);

receiving, at the DHCP relay, the subsequent DHCP message for request,

determining whether the subsequent DHCP message for request includes the field associated with the DHCP server,

in response to determining that the subsequent DHCP message for request does not include the field associated with the DHCP server sending the subsequent DHCP message for request to the DHCP server directly,

otherwise, filling in the field associated with the DHCP server with the extracted and stored at least one server parameter and sending the subsequent DHCP message for request to the DHCP server so that one or more other subsequent DHCP messages for request can pass validity checking by the DHCP server (**Wong: Fig. 6; trusted identifiers and forwards message to client/server**).

One of ordinary skill in the art would have combined **Lim** with **Wong** for the same reason as in **claim 1**.

7. Regarding **claim 3**, **Lim-Wong-Michael** discloses wherein further comprising: controlling and managing at the DHCP relay, the interaction between the DHCP client and the DHCP server by varying network parameters of the DHCP client and detecting whether the DHCP client is online according to requirements of a user management strategy (**Wong: Col. 6 lines 7-28; power on sequence and renewal of IP address**).

One of ordinary skill in the art would have combined **Lim** with **Wong** for the same reason as in **claim 1**.

8. Regarding **claim 4**, **Lim-Wong-Michael** discloses wherein for a DHCPDISCOVER or DHCPREQUEST message sent from the DHCP client to the DHCP server, the DHCP relay fills in the at least one field associated with the DHCP relay with a value so that a DHCPOFFER, DHCPACK or DHCPNAK response from the DHCP server to the DHCP client can be sent to the DHCP relay (**Fig. 1-2 and Col. 6 lines 1-27; DHCP broadcast messages are processed by DHCP relay before being forwarded to DHCP sever**).

One of ordinary skill in the art would have combined **Lim** with **Wong** for the same reason as in **claim 1**.

9. Regarding **claim 5**, **Lim-Wong-Michael** discloses wherein upon receiving a DHCPOFFER, DHCPACK or DHCPNAK response, the DHCP relay extracts and stores the at least one server parameter in the DHCPOFFER, DHCPACK or DHCPNAK response, and replaces the at least one server parameter with the at least one relay parameter so that a unicast request to the DHCP server can be still sent to the DHCP relay after the DHCP client has configured an IP address (**Fig. 1-2 & 7-9 and Col. 6 lines 1-27; trusted identifier, cookie and messages being processed by DHCP relay before being forwarded to DHCP client/sever**).

One of ordinary skill in the art would have combined **Lim** with **Wong** for the same reason as in **claim 1**.

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10. Regarding **claim 6**, **Lim-Wong-Michael** discloses wherein the DHCP relay receives the subsequent DHCP message for response, and if the field associated with the DHCP server is contained in the subsequent DHCP message for response, the DHCP relay replaces value of the fields associated with the DHCP server with its IP address (**Fig. 1-2 & 7-9 and Col. 6 lines 1-27; trusted identifier, cookie and messages being processed by DHCP relay before being forwarded to DHCP client/sever**).

One of ordinary skill in the art would have combined **Lim** with **Wong** for the same reason as in **claim 1**.

11. Regarding **claim 7**, **Lim-Wong-Michael** discloses wherein the subsequently received DHCP message for response is a DHCPACK message in a Dynamical Host Configuration Protocol (**Fig. 6-8 and Col. 2 lines 39-51; [618] DHCPACK and RFC 1541**).

One of ordinary skill in the art would have combined **Lim** with **Wong** for the same reason as in **claim 1**.

12. Regarding **claim 8**, **Lim-Wong-Michael** discloses wherein the subsequent DHCP message. for request is a DHCPREQUEST message, a DHCPINFORM message or DHCPRELEASE message in a Dynamical Host Configuration Protocol (**Fig. 6-8 and Col. 2 lines 39-51; DHCP RFC 1541**).

One of ordinary skill in the art would have combined **Lim** with **Wong** for the same reason as in **claim 1**.

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13. **Claims 9- 13** list the same limitations as those in **claims 1- 8**, but in apparatus form rather than method form, and are therefore rejected using the same rationale as applied in **claims 1- 8**.

**Examiner Note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in its entirety as potentially teaching of all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.**

### ***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MACEEH ANWARI whose telephone number is

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(571)272-7591. The examiner can normally be reached on Monday-Friday 7:30-5:00 PM ES.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Vaughn can be reached on 571-272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

M.A.

/William C. Vaughn, Jr./

Supervisory Patent Examiner, Art Unit 2444